

AMENDMENTS TO THE APPLICATION

Amendments to the Specification

Please replace all the text on Page 18 and the first line of Page 19 of the Specification with the following amended paragraphs:

The recitation of propellant alternatives in Table Two is not intended to exclude any unlisted or equivalent alternatives.

The end of the boom 11 which holds the propellant tank 13 is equipped with reusable docking hardware 14 that is able to contact or grasp a satellite 15 or some other object in space. In one embodiment of the invention, the tank is replenishable. This docking hardware 14 may be referred to as a grasping device, and may comprise any multiple-use means for engaging an object above the Earth. Many different embodiments of the docking hardware 14 may be incorporated in the present invention. In general, the preferred embodiment of the invention is reusable, utilizes a multiple-use docking device 14, which, unlike some of the prior art, is designed for many missions over a relatively long life-time.

The docking hardware 14 may be configured to interact with a wide variety of satellites 15 or other objects above the surface of the Earth. In general, the docking hardware 14 comprises any reusable or multiple-use means which is adapted to interact with or to engage a payload launch vehicle interface, or to otherwise engage an object in space. In one embodiment, which is shown best in Figures 1A, 3, 4, 5, 7 and 13, the grasping means comprises a plurality of

segments, which extend outwardly away from one end of the boom. These segments are configured to partially surround or to enclose an object, and then to engage and to grasp a wide variety of satellites 15 or other objects above the surface of the Earth without the need for any preconfigured docking interface on the object which is grasped. Unlike some previous equipment designed for launch into orbit, the present invention includes a grasping means 14 which is not permanently affixed or connected to a payload.

A radiator 16 is disposed generally perpendicular to the boom 11 near the ion thrusters 12. The radiator 16, which conveys a coolant through manifold 17 and fluid flow tubes 18, dissipates heat from an energy converter out to space. The energy converter is powered by a nuclear reactor 19. The radiator 16 is generally situated between the grasping device 14 and the reactor 19. In general, the radiator 16 is a pumped fluid loop. An alternative embodiment comprises a capillary pump loop and/or heat pipes. In another alternative embodiment of the invention, the radiator 16 may be disposed along the boom 11, or a single combined radiator/boom means may be employed.